Publications and Training Solutions
Course Syllabus: 523-0829737

COURSE TITLE: Collins Aerospace KuSAT-2000 Organizational Level Maintenance Training

PREREQUISITES:

1. Students should have basic knowledge of aircraft avionics systems and a working command of the English language (interpreters are available for special cases).

PURPOSE:

This course provides line maintenance personnel with training to address operation, maintenance, troubleshooting, software loading, and removal and replacement of Line Replacement Units (LRUs) in the Collins Aerospace KuSAT-2000 Satellite Communications System.

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OBJECTIVES: Upon completing this course, the student should be able to:

1. Have an overall understanding of the Collins Aerospace KuSAT-2000 Satellite Communications System capabilities and operation.
2. Describe the Collins Aerospace KuSAT-2000 Satellite Communications System service options.
3. Understand the supplier and support roles for the Collins Aerospace KuSAT-2000 Satellite Communications System.
4. Identify system components and the functional/operational characteristics of each Collins Aerospace KuSAT-2000 Satellite Communications System Line Replaceable Units (LRUs).
5. Explain in detail the normal function and operation of the Collins Aerospace KuSAT-2000 Satellite Communications System, including terminology and nomenclature.
6. Identify typical aircraft system interface and system architecture of the Collins Aerospace KuSAT-2000 Satellite Communications System.
7. Discuss the use of appropriate documentation and maintenance procedures for the Collins Aerospace KuSAT-2000 Satellite Communications System.
8. Discuss the use of appropriate documentation and software requirements related to the Collins Aerospace KuSAT-2000 Satellite Communications System.
9. Explain the Collins Aerospace KuSAT-2000 Satellite Communications System failure indications.
10. Discuss the activation and component exchange process along with software loading of the Collins Aerospace KuSAT-2000 Satellite Communications System.
11. Perform fault isolation of the Collins Aerospace KuSAT-2000 Satellite Communications System to a faulty LRU using built-in test diagnostics, (for the purpose of fault confirmation, fault diagnosis, and fault rectification, in accordance with the maintenance manual procedures).

COURSE LENGTH: 3 Days

TRAINING DEVICES:

1. Aircraft/Lab/Desktop Simulator (Subject to Availability)

TRAINING MATERIALS:

1. PowerPoint Presentation with LCD Projector
2. Student Training Manual
3. Information Handouts

REFERENCES:

1. Collins Aerospace KuSAT-2000 Tail-Mounted SATCOM System Installation Manual, 523-0829572

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COURSE OUTLINE

0. Welcome & Introductions

    A. Introductions

    B. Registration

    C. Course Description

    D. Course Objectives

    E. Course Outline

    F. Course Critique

    G. Publications

    H. Summary

1. Collins Aerospace KuSAT-2000 Communications System Overview

    A. Lesson Overview

    B. Capabilities/Coverage

    C. Service Options

    D. Supplier/Support Roles

    E. Summary

2. Equipment and Component Descriptions

    A. Lesson Overview

    B. Collins Aerospace KuSAT-2000 Communications System

        i. System Interconnect/Block Diagrams

        ii. Components

            1. ACMU-2000

            2. BDC-2000

            3. BUC-2000

        4. GAU-2000

     iii. Supporting Equipment

        1. Diplexer

        2. Router

  C. Supplemental Type Certificates (STCs)

  D. Summary

  E. Older Astronics vs. KuSAT-2000

3. **Theory of Operation**

  A. Lesson Overview

  B. Safety Advisory

  C. Operational Features and Characteristics

  D. Theory of Operation

     i. Description of Operation

        1. Block Diagram

        2. System Interconnect

        3. System Wiring Diagram

  E. Summary

4. **Line Maintenance and Troubleshooting**

  A. Lesson Overview

  B. Troubleshooting Tools

     i. Configuration of Maintenance Laptop

     ii. Connecting to the ACMU

        1. Collins KuSAT-2000 GUI Navigation

  C. Ground Troubleshooting

       i.   Wiring Inspections

      ii.   Physical Inspections

     iii.   ACMU Troubleshooting

          1.   Built-in-Testing/Initiated Tests

          2.   Indicators/IP Addresses

  D. In-Flight Troubleshooting

  E. Connecting to the Modem

  F. Summary

5. System Maintenance and Software

  A. Lesson Overview

  B. Installation Manual

  C. Activations and Exchange Process

       i.   Provisioning

      ii.   Commissioning

          1.   Field

          2.   Over-the-Air (OTA)

  D. Software Loading

       i.   Modem Files

          1.   Terminal Options File/Firmware

          2.   Terminal Local Area Network (LAN) Options

      ii.   ACMU Files

          1.   System Software

          2.   Configuration File

  E. Service Bulletins

  F. SES Accounts and Screens

        i.   iDirect Pulse

            1.   Login/IMS Customer Support

            2.   Main Window/Menu Tabs

   G. Summary

6. Course Summary

   A. Review

   B. Test

   C. Course Critiques and Evaluations

EQUIPMENT TYPE:

EQUIPMENT	NOMENCLATURE	PART NUMBER
GAU-2000	Gimbal Antenna Unit	822-3658-001
ACMU-2000	Antenna Control Modem Unit	822-3659-001
BUC-2000	Block Up Converter	822-3661-001
BDC-2000	Block Down Converter	822-3662-001